

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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**FINAL STATEMENT OF REASONS****CALIFORNIA CODE OF REGULATIONS**

TITLE 8: Chapter 4, Subchapter 7, Articles 14, 92, 93, and 96;
Sections 3472(b), 4884, 4886, 4907(b)(2), 4924(b), 4965, and 4966
of the General Industry Safety Orders

**Cranes and Other Hoisting Equipment With Regard to Manufacture Dates;
and the Use of Load Indicating and Load Moment Devices**

There are no modifications to the information contained in the Initial Statement of Reasons except for the following sufficiently related modifications that are the result of public comments and/or Board staff evaluation.

Article 91. Definitions. Section 4885. (Figure 15)

Section 4885 of the General Industry Safety Orders (GISO) provides definitions relevant to the operation of cranes and other hoisting equipment. This section also provides a number of diagrams depicting various types of cranes. As a result of public comments and discussion with representatives from the Division of Occupational Safety and Health (Division) it was determined that Figure 15 is not an accurate depiction of a mobile tower crane and that the diagram depicts a mobile crane with a boom attached in a tower configuration. Therefore, a modification is proposed to strike out the word "tower" and rename Figure 15 as a "mobile crane with tower attachment." This proposed modification is necessary for clarification to accurately name Figure 15 and ensure the regulated public will associate the diagram with a mobile crane subject to the requirements of Article 93, "Boom-Type Mobile Crane."

Article 96. Tower Cranes. Section 4965. General.

Subsection (a)

Existing Section 4965(a) provides a general description of cranes subject to the requirements of Article 96, Tower Cranes. An amendment was originally proposed to list certain types of tower cranes defined in Section 4885 and to delete language in subsection (a) stating that requirements of Article 96 apply to cranes "of the general type such as those having a revolving horizontal boom with counterweight on a single vertical mast." Mobile tower cranes meeting the requirements contained in the American Society of Mechanical Engineers (ASME) consensus standards for tower cranes operate with the mast or tower in a vertical or near vertical position.

After evaluation of written comments and discussion with the Division's crane unit and Mr. Brad Closson, North American Crane Bureau (NACB), it was determined that proposed modifications reinstating the original language and adding "and mobile tower cranes" to subsection (a) after the qualifying language that certain tower cranes have a vertical mast, addresses any potential issue as to whether "mobile tower cranes" must have an exactly vertical mast or tower.

Additionally, the word "horizontal" in relation to crane booms is omitted in the proposed modifications to subsection (a). This is because a luffing tower crane boom has a mechanism to raise and lower the boom in a vertical plane and leaving the term "horizontal" in the text would omit this type of crane from the scope section.

The proposed modifications are necessary to clarify the type of cranes (e.g., mobile tower cranes and luffing tower cranes) applicable to the requirements contained in Article 96, Tower Cranes.

Subsection (g)

Existing subsection (g) requires parts of tower cranes requiring adjustment or maintenance to be provided with access walkways, handholds, footholds, safety lines, or other safeguards as necessary to eliminate the hazard of falling from a crane. As a result of written comments, a revision is proposed to provide an "exception" to this subsection for mobile tower cranes. The proposed modification is necessary because manufacturers of mobile tower cranes design them without walkways, handholds, or other safeguards to protect workers from falling when adjustment or maintenance can be achieved from the ground.

Section 4966. Erection, Dismantling and Operation.

Section 4966(a)(1)

Section 4966(a)(1) requires that the erection, climbing (up and down) and dismantling of a tower crane comply with Title 8, Section 341.1(b)(2). The permit related requirements contained in the referenced Section 341.1(b)(2) are specific to fixed tower cranes. As a result of public comments, a proposed editorial modification is necessary to insert the word "fixed" between the words "a" and "tower" in the first sentence for clarity.

Section 4968. Safety Devices.

Section 4968 provides the requirements for tower crane safety devices such as, visual warning devices, audible signals and automatic stops, which operate in relation to rated loads, limit devices and constant pressure control devices. Mobile tower cranes, which Figure 15, Article 91 was intended to depict, are excluded from the requirements of Section 4968. However, as indicated above in the rationale for revisions to Section 4885, existing Figure 15 actually depicts a mobile type crane with a boom attached in a tower configuration, which is subject to the requirements contained in Article 93, "Boom-Type Mobile Cranes." Therefore, an editorial

modification is proposed to delete the parenthetical reference to Figure 15 in the first sentence of Section 4968.

While this section was not originally noticed for public comment, Board staff believes the regulated public can reasonably have expected the proposed modification necessary for clarity to remove the reference to Figure 15, which is incorrect in that it does not represent a mobile tower crane.

SUMMARY AND RESPONSE TO ORAL AND WRITTEN COMMENTS

I. Written Comments

Mr. Brad Closson, Executive Vice President, North American Crane Bureau by letter dated June 4, 2001.

Comment No. 1

Mr. Closson expressed concern with the proposed amendments to Section 4965(a), which is the scope section for Article 96, Tower Cranes. Mr. Closson provided background information stating that the California Labor Code (LC) Section 7371(c) and (d) defines “tower cranes” and “mobile tower cranes” respectively. Mr. Closson commented that all mobile tower cranes only become a tower crane when they meet the definition of a “tower crane.” The definition of a tower crane requires that the tower be vertical. Mr. Closson further noted that most, if not all, mobile tower cranes require that their tower (mast) be set at approximately 87 degrees or less due to the manufacturer’s design and recommendations in crane operating manuals. He further indicated that mobile tower cranes were not considered in existing Article 96 regulations and points out possible conflicts as noted in Comment No. 2.

Response

Certain self-erecting mobile type cranes have their tower or mast set in the vertical position and, as noted by Mr. Closson, other mobile tower cranes have a mast or tower that operates at approximately 87 degrees or in a near vertical position. “Mobile tower cranes” are separately defined in LC Section 7371(d) independent of the definition for “tower crane.” The Board believes the LC intent was to include mobile tower cranes as a type of tower crane as they are included in LC Section 5, Cranes, Article 1, “Permits for Tower Cranes.” Board staff discussed the LC definitions as well as Title 8 definitions in Section 4885 for tower cranes and mobile tower cranes with Mr. Closson and Division representatives and believe the proposed modifications for Section 4965(a) will address Mr. Closson’s concerns. Modifications are proposed that will read similar to the existing Section 4965(a) except that mobile tower cranes are added to the general scope section after the qualifying language that tower cranes must have “a vertical mast.”

The final version of the subsection as modified is proposed to read, “The requirements of this Article shall apply to cranes of the general type such as those having a revolving boom with

counterweight on a single vertical mast, and mobile tower cranes.” It should be noted that the word “horizontal” in relation to crane booms is omitted in the proposed modifications to the proposal. This is because a luffing tower crane boom has a mechanism to raise and lower the boom in a vertical plane and leaving the term “horizontal” boom in the text would omit this type of crane from the scope section.

Comment No. 2

Mr. Closson pointed out regulations in Article 96, Tower Cranes that may not be applicable or may be in conflict with the design of mobile tower cranes. Section 4965(d) in part requires cranes to be equipped with a device that will effectively prevent overloading beyond the certified agent’s recommendations. Mr. Closson notes the only diagram of a “mobile tower crane” in the safety orders is depicted in Figure 15. He believes the figure depicted in Figure 15 is not a mobile tower crane but rather a boom-type mobile crane covered by Article 93 of the crane orders. The type of crane depicted in Figure 15 could cause conflicting requirements for overload devices.

Response

Board staff concurs that the diagram depicted in Section 4885, Figure 15 is a mobile crane with a boom attachment and is not an adequate example of a mobile tower crane that would be subject to Article 96 regulations. Board staff is proposing modifications to rename Figure 15 to read “Mobile Crane With Tower Attachment.”

Comment No. 3

Mr. Closson stated that all mobile tower cranes are not designed to the same requirements as tower cranes. There are not walkways to all areas needing adjustment [as required by Section 4965(g)]. Extensive retrofitting, if at all possible, by owners and approved by the manufacturers would be required on the cranes.

Response

Often maintenance and adjustments required on mobile tower cranes is achieved at the ground level, which eliminates fall hazards and makes extensive retrofitting unnecessary. Therefore, Board staff is proposing a modification to address this comment by providing an exception to Section 4965(g) for mobile tower adjustment or maintenance that can be achieved from the ground.

Comment No. 4

Mr. Closson stated that Section 4966(a)(1) is specifically related to fixed tower cranes as seen by its reference to Section 341.1(b)(2), which provides special permit-related provisions for fixed tower cranes. By including mobile tower cranes in the definition of a “tower crane” the regulated public will be confused as to what permitting requirements apply to which type of crane.

Response

Section 4966(a)(1) states “The erection, climbing (up and down) and dismantling of a tower crane shall comply with the requirements of Title 8, Section 341.1(b)(2). The term “climbing” with respect to tower cranes is the process whereby an entire crane is raised on or within a structure that is under construction. The term is generally used in relation to changing the height (up or down) of fixed tower cranes. Additionally, when one reads the referenced Section 341.1(b)(2), it is clear that it applies only to fixed tower cranes. The Board concurs that there could be a clarity issue and therefore has proposed an editorial modification in the first sentence of Section 4966(a)(1) to insert the word “fixed” between the words “a” and “tower.”

Comment No. 5

Mr. Closson recommended that the Board should not adopt the proposed change to Section 4965(a). He indicated that a more accurate definition of the cranes to be included in the section should be accomplished including a review of the specific sections in Article 96 for their applicability and achievability to the crane types included in the proposal.

Response

Board staff discussed the proposed modifications to Sections 4885, Figure 15; 4965(a) & (g); 4966; and Section 4968 with Mr. Closson and the Division’s Crane Unit and believe the proposed modifications will address Mr. Closson’s concerns. Also see the response to Comment No. 1.

The Board thanks Mr. Closson for his comments and participation in the Board’s rulemaking process.

II. Oral Comments

There were no comments received at the July 19, 2001 Public Hearing.

DETERMINATION OF MANDATE

These regulations do not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed regulation. No alternative considered by the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the adopted action.